

Health · Second Opinion

Canada still downplays risk of airborne spread of coronavirus despite WHO, CDC guidance

Public Health Agency of Canada says aerosol transmission 'has occurred' but won't update public guidelines

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Studies of superspreading events, such as a choir practice in Washington state, a call centre in South Korea and a restaurant in China, have supported the conclusion that some degree of transmission is occurring through the air. (Evan Mitsui/CBC)

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Canada's guidelines on how COVID-19 spreads still do not acknowledge the threat of infection through the air, despite other countries and international health organizations updating their stance on the issue.

As researchers around the world race to learn as much as possible about the novel coronavirus, many health agencies have concluded that it can be transmitted via aerosols — or microscopic airborne particles — yet Canada has not followed that lead so far.

It was originally believed the novel coronavirus spread only via large droplets, which fall and settle on the ground within a distance of two metres — prompting the recommendation to social distance and stay two metres away from others. But understanding of the virus has evolved, and it's now widely believed that it can also spread from smaller droplets that contain virus particles that can remain suspended in the air for a long time.

The World Health Organization came under fire in July after 239 scientists from 32 countries [wrote an open letter](#) calling on the United Nations agency to update its messaging on the risk of airborne transmission of the coronavirus.

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[The WHO amended its guidelines](#) days after the letter and acknowledged the possibility that these smaller droplets, also known as aerosols, can lead to outbreaks

of COVID-19 in places like [choir practices](#), [restaurants](#) and [fitness classes](#).

The U.S. Centers for Disease Control and Prevention (CDC) [updated its guidelines](#) on Monday to say COVID-19 can sometimes be spread by airborne transmission, after [mistakenly posting and later removing](#) a draft version of guidelines.

"I was happy and relieved, because now they're acknowledging the best available science that we have," said Linsey Marr, an expert in the transmission of viruses by aerosol at Virginia Tech.

"You're not going to be able to bend the curve unless you pay attention to this transmission route."

No plans to update guidelines in Canada

Yet the [Public Health Agency of Canada's guidelines](#) make no mention of aerosol transmission and instead say the virus spreads only through breathing in respiratory droplets, touching contaminated surfaces and common greetings like handshakes and hugs.

Besides the WHO and the CDC, countries like [Germany](#) and [Italy](#) recognize aerosols as a risk. But PHAC told CBC News it is not updating its guidance on airborne transmission — even though it admits aerosol spread has happened.

"Aerosol transmission of COVID-19 in ventilated and unventilated environments continues to be studied," a statement from the federal agency stated. "There have been situations where aerosol transmission in closed settings has occurred."



The Public Health Agency of Canada says its guidance remains the same: limit time spent in closed spaces, crowded places and close contact situations where there are 'no controls, protocols, or policies in place to reduce the risk of COVID-19, like good ventilation.' (Evan Mitsui/CBC)

PHAC says its guidance remains the same: limit time spent in closed spaces, crowded places and close contact situations where there are "no controls, protocols or policies in place to reduce the risk of COVID-19, like good ventilation." PHAC also recommends maintaining physical distancing, hand-washing and mask-wearing.

But infectious diseases specialist and medical microbiologist Dr. Raymond Tellier, who is also an associate medical professor at McGill University in Montreal, says that by acknowledging ventilation plays a role in curbing transmission of COVID-19, PHAC is admitting that aerosols are a significant route of transmission.

That's because ventilation does not change the risk of transmission via larger respiratory droplets or contact with contaminated surfaces.

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"If you promote avoiding a poorly ventilated indoor area, you implicitly admit that you accept aerosol transmission because the ventilation affects only aerosol transmission," he said.

"So if you are pushing ventilation, what are you talking about, if not aerosols?"

The agency said it is also reviewing evidence on the topic and acknowledges that aerosols can be suspended in the air and infect others nearby, but the rate at which that happens and under what conditions is "not known."

"The resistance has been extremely strong in Canada," says Tellier.

"We have a lot of data that builds up a very strong case for aerosol transmission to be also a part of the transmissibility of the disease."

Studies of [superspreading events](#), such as a [choir practice](#) in Washington state, a [call centre](#) in South Korea and a [restaurant](#) in China, have supported the conclusion that some degree of transmission is occurring through the air.

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Tellier said the reluctance to acknowledge aerosol transmission may be related to the need for more extensive personal protective equipment like N95 masks in hospitals and increasing ventilation and air circulation in public buildings, which can be expensive.

"I've heard anecdotes of school districts, where they pointed to the older CDC guidance and said, 'Well, they don't say anything about it so we don't have to do anything about it,'" Marr said. "Even when people were urging them to pay attention to ventilation."

The importance of masks

Jose Jimenez, a professor of chemistry at the University of Colorado specializing in aerosol science, said a simpler way of looking at aerosols is by comparing it to smoke, where you are exposed to a higher concentration being exhaled the closer you are to an infected individual, which highlights the importance of wearing a tight-fitting mask.

"If everyone in the world could just spend 10 minutes paying attention to not having gaps in their mask, that will be a huge benefit," he said. "It's almost amazing that the masks are effective given how poorly they're mostly worn."

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Dr. Mark Loeb, an infectious disease expert with the department of medicine at McMaster University in Hamilton, said that while he believes most COVID-19 transmission occurs in short distances, there are circumstances when longer range transmission can occur.

One example he pointed to was a [nursing home outbreak in Montreal](#) where virus particles were found in the air, and a faulty ventilation system may have been a source of transmission that infected 226 residents and 148 employees.

"So I think we have to say that in certain circumstances, it can happen," Loeb said. "But I do think that sometimes there's over-interpretation."

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He said when experts from different schools of thought look at the same outbreak, they can come to completely different conclusions.

Take the choir study, for example, where 61 members gathered for a two-and-a-half-hour practice in Mount Vernon, Wash., on March 10.

They sat close to each other, sang together, shared snacks and stacked chairs when it was over.

Two weeks later, 53 of the members in attendance had either confirmed or probable cases of COVID-19. Three of those people were hospitalized. Two died.

"Some people say, well, this is definitive proof of aerosolization. Other people will say, well, if you look at it more carefully, people are walking around touching each other in close contact," he said.

- **SECOND OPINION** [Why it may be harder to catch COVID-19 from surfaces than](#)

we first thought

"Sometimes it becomes impossible to say it's definitely one or definitely the other."

Regardless of how much of a role aerosol transmission plays in the spread of COVID-19, Tellier said for some reason the burden of proof is much higher.

"There's a very, very high threshold for scientific certainty for aerosols," he said.

"Somehow, transmission through surfaces has been accepted with a lot less evidence."

The WHO said in July there have been "no specific reports" of COVID-19 directly from contact with contaminated surfaces, even though research consistently shows the virus can survive on them for several hours or days.

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"We're not seeing people infected from touching packages," Loeb said.

For its part, the CDC says the virus spreads "[less commonly](#)" from touching contaminated surfaces, while PHAC maintains that is one of the ways the virus "[most commonly spreads](#)."

"My view is that there's a lot that's unknown and we have to keep an open mind," he added. "We have to look at all the data."

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